Application No.:09/773,944
Filed: February 1, 2001
Group: 3726

This listing of claims will replace all prior versions and listings of claims in this application:

a) Listing of Claims

1. (currently amended) A process for aligning an optical component by plastic deformation, the process comprising:

finding a desired position of an optical axis of the optical component relative to a rest position of the optical axis of the optical component; and

exerting a deformation force that exceeds a yield force to plastically deform the optical component so that the optical axis is moved in a direction of the desired position;

wherein the rest position is found after the desired position is found to account for any plastic deformation induced during the step of finding the desired position.

2. (cancelled)

3. (currently amended) A process as claimed in claim 1, further comprising avoiding backlash by not deforming the optical component such that a new rest position of the optical axis is ~~beyond~~ opposed the desired position with respect to a previous rest position.

4. (original) A process as claimed in claim 1, further comprising monitoring an active alignment signal while exerting the deformation force.

5. (original) A process as claimed in claim 4, further comprising comparing the active alignment signal to a level of the active alignment signal when the optical component was at the desired position.

6. (currently amended) A process for aligning an optical component by plastic deformation, the process comprising:

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finding a desired position of an optical axis of the optical component relative to a rest position of the optical axis of the optical component;

exerting a deformation force that exceeds a yield force to plastically deform the optical component so that the optical axis is moved in a direction of the desired position;

~~A process as claimed in claim 4, further comprising:~~

monitoring an active alignment signal while exerting the deformation force;

comparing the active alignment signal to a level of the active alignment signal when the optical component was at the desired position; and

finding a new desired position relative to a new rest position, if a level of the active signal detected while exerting the deformation force is less than the level of the active alignment signal when the optical component was at the desire position by a predetermined tolerance.

Cont

7. (original) A process as claimed in claim 1, wherein the step of finding the desired position of the optical axis of the optical component comprises monitoring an active alignment signal while moving the optical axis of the optical component.

8. (original) A process as claimed in claim 7, wherein the optical component includes an optical fiber having an endface and a deformable mounting structure that supports the optical fiber on an optical bench, and wherein the step of monitoring the active alignment signal comprises:

generating and coupling an optical signal into the optical fiber;

detecting a level of backreflection of the optical signal into the optical fiber through the endface as the active alignment signal.

9. (original) A process as claimed in claim 8, wherein the step of finding the desired position further comprises positioning the optical component to maximize a level of the backreflection.

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10. (original) A process as claimed in claim 8, further comprising monitoring the active alignment signal while exerting the deformation force to assess the plastic deformation of the optical component.

11. (currently amended) A process for aligning an optical component by plastic deformation, the process comprising: ~~as claimed in claim 7,~~

finding a desired position of an optical axis of the optical component relative to a rest position of the optical axis of the optical component;

exerting a deformation force that exceeds a yield force to plastically deform the optical component so that the optical axis is moved in a direction of the desired position;

wherein the step of finding the desired position of the optical axis of the optical component comprises monitoring an active alignment signal while moving the optical axis of the optical component; and

wherein the optical component includes an optical element and a deformable mounting structure that supports the optical element on an optical bench, and wherein the step of monitoring the active alignment signal comprises:

transmitting an optical signal to the optical element;

detecting the optical signal after interaction with the optical element;

spectrally analyzing the optical signal for side mode suppression; and

using the side mode suppression as the active alignment signal.

12. (original) A process as claimed in claim 11, wherein the step of finding the desired position further comprises positioning the optical component to maximize the level of the side mode suppression.

13. (original) A process as claimed in claim 11, further comprising monitoring the active alignment signal while exerting the deformation force to assess the plastic deformation of the optical component.

14. (original) A process as claimed in claim 7, wherein the optical component includes an optical fiber having an endface and a deformable mounting structure

that supports the optical fiber on an optical bench, and wherein the step of monitoring the active alignment signal comprises:

generating an optical signal by energizing an active device on the optical bench; and

detecting a level of the optical signal that is coupled into the optical fiber through the endface as the active alignment signal.

15. (original) A process as claimed in claim 14, wherein the step of finding the desired position further comprises positioning the optical component to maximize a level of the active alignment signal.

16. (original) A process as claimed in claim 14, further comprising monitoring the active alignment signal while exerting the deformation force to assess the plastic deformation of the optical component.